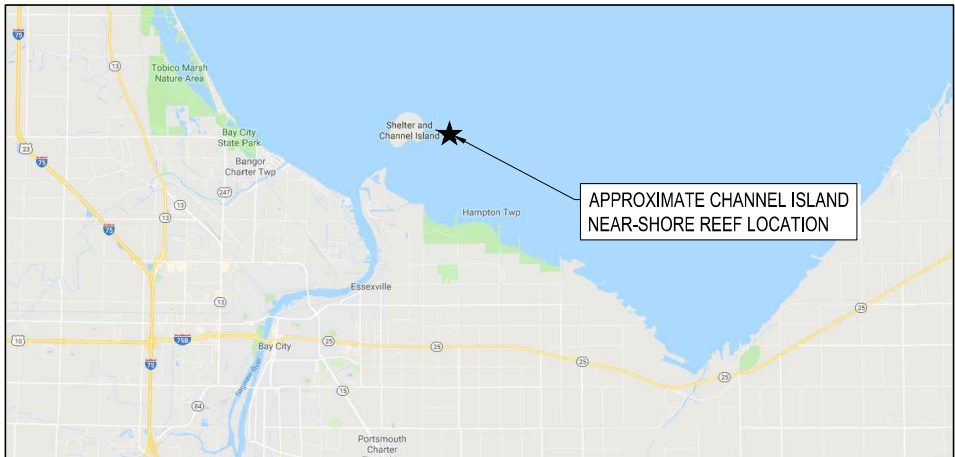


PREPARED FOR:

STATE OF MICHIGAN, DTMB-SFA File No. 751/24454.CTS
for Michigan Department of Natural Resources
Inner Saginaw Bay - Reef Restoration, Near Shore Reef Installation



PROJECT VICINITY MAP



MICHIGAN DEPARTMENT OF NATURAL RESOURCES
BAY CITY CUSTOMER SERVICE CENTER
3580 STATE PARK DRIVE
BAY CITY, MI 48706

DRAWING INDEX

COVER

- L1.01 OVERALL LOCATION PLAN
- L1.02 CHANNEL ISLAND NEAR-SHORE REEF ENLARGEMENT
- L1.03 CROSS SECTIONS

GENERAL NOTES

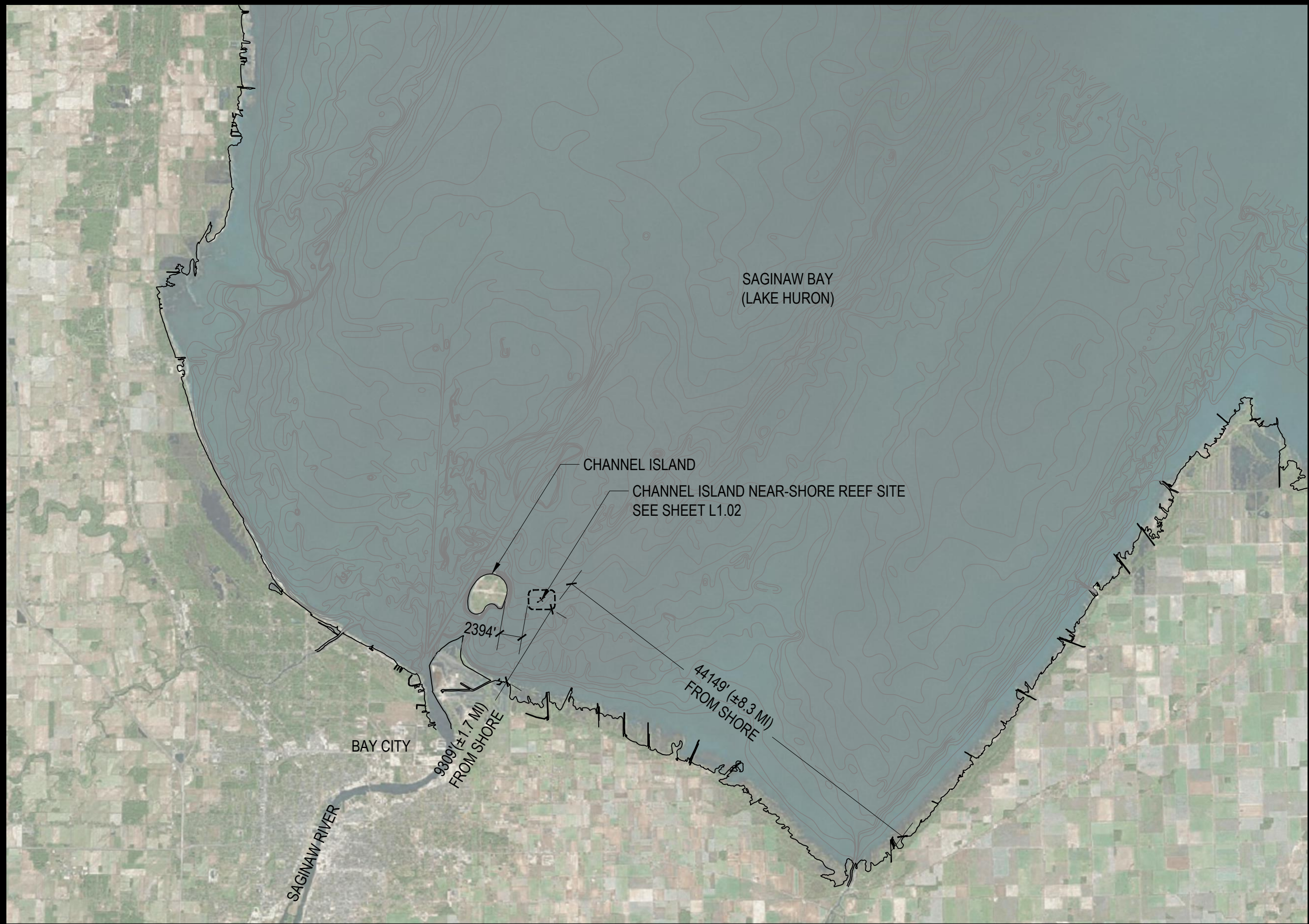
1. PERMIT APPLICATIONS WILL BE SUBMITTED TO THE US ARMY CORPS OF ENGINEERS AND THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY. ONCE PERMITS ARE OBTAINED, IT IS THE CONTRACTOR'S RESPONSIBILITY TO ABIDE BY ALL CONDITIONS OF THESE PERMITS.
2. IN ORDER TO PREVENT THE TRANSPORT OF INVASIVE SPECIES (I.E. AQUATIC WEEDS OR MUSSELS), ANY EQUIPMENT (BOAT, TRAILER, SOUNDING/SURVEY EQUIPMENT, BUOYS, CAMERAS, DRAG BEAM, CLAMSHELL, ETC.) THAT MOVES BETWEEN WATERWAYS AND WILL BE PLACED IN THE WATERS OF SAGINAW BAY SHOULD BE VISUALLY INSPECTED, PHYSICALLY CLEANED OF ANY VISIBLE DEBRIS, AND DRIED FOR 48 HOURS BEFORE USE IN ANY OTHER WATERWAY.
3. BATHYMETRIC DATA SUPPLIED BY THE MICHIGAN DEPARTMENT OF NATURAL RESOURCES. HORIZONTAL REFERENCE IS MICHIGAN STATE PLANE, SOUTH ZONE, NAD83, US FEET. VERTICAL REFERENCE IS IGLD85, INTERNATIONAL FEET.
 - 3.1. LOW WATER DATUM ELEVATION: 577.5±
 - 3.2. WATER ELEVATION AT ESSEXVILLE, MI STATION (ID#9075035) ON DATE OF SURVEY (07/22/2021) OF CHANNEL ISLAND NEAR SHORE REEF: 581.02
 - 3.3. ORDINARY HIGH WATER ELEVATION: 581.5±
4. TOLERANCES FOR REEF CONSTRUCTION SHALL BE AS FOLLOWS:
 - 4.1 VERTICAL TOLERANCE 0.5 FEET.
 - 4.2 HORIZONTAL TOLERANCE 5.0 FEET
 - 4.3 MAXIMUM ELEVATION FOR TOP OF REEF IS 572.0 FEET
 - 4.4 MINIMUM ELEVATION FOR TOP OF REEF IS 571.0 FEET
 - 4.5 MINIMUM ROCK DEPTH SHALL BE 3 FEET.
 - 4.6 MAXIMUM ROCK DEPTH SHALL BE 4 FEET.

FOR INFORMATION REGARDING THIS PROJECT CONTACT: Marty Boote, MBoote@ectinc.com

FOR BIDDING
MAY 8, 2025

ECT PROJECT # 240899
PREPARED BY:

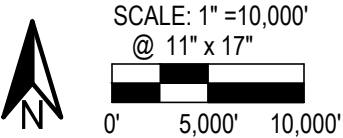
ECT Environmental
Consulting &
Technology, Inc.
2001 COMMONWEALTH BLVD # 300
ANN ARBOR, MI 48105
PHONE: (734) 769-3004

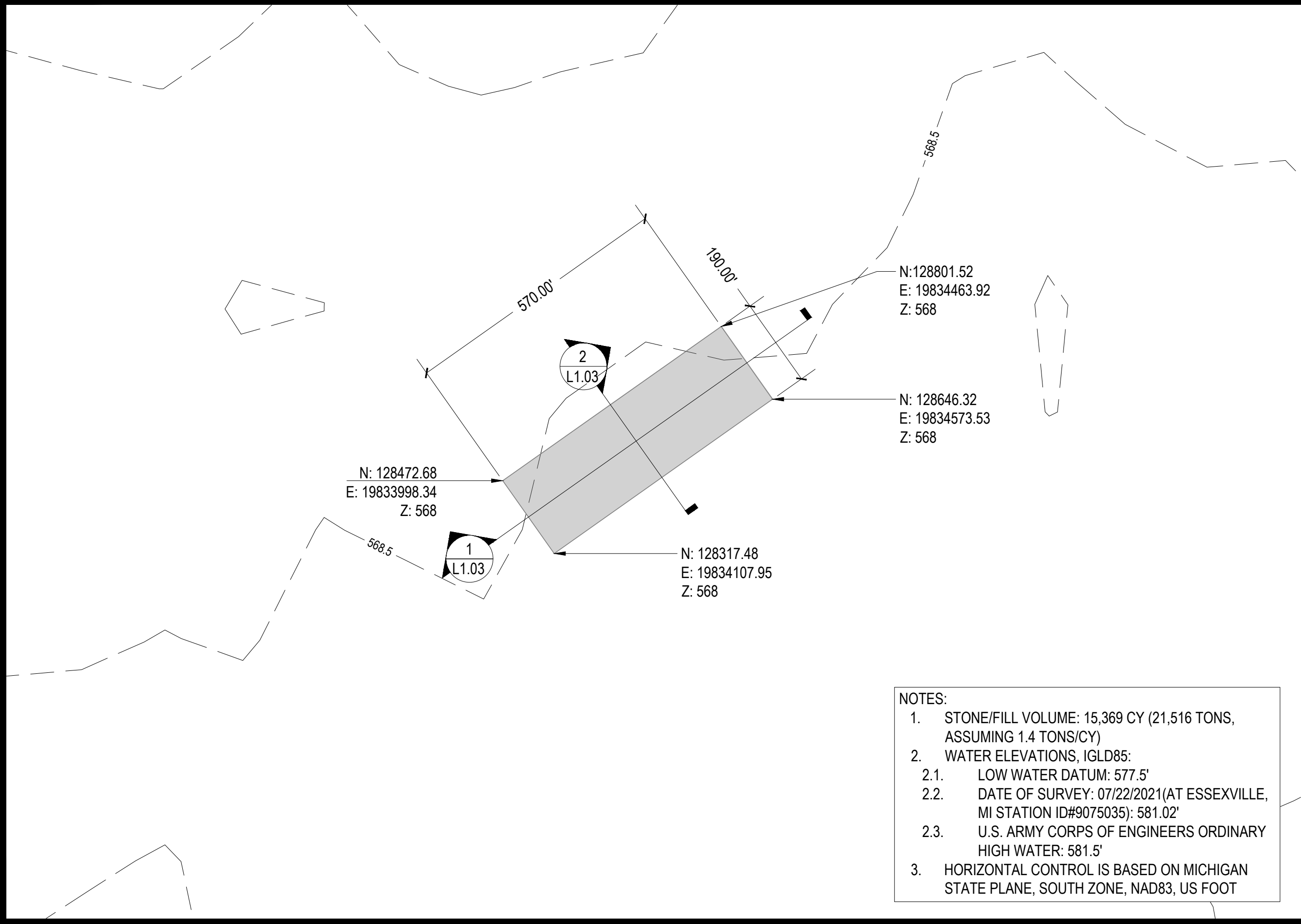


STATE OF MICHIGAN,
DTMB-SFA File No. 751/24454.CTS
for
Michigan Department of Natural Resources
Inner Saginaw Bay - Reef Restoration, Near Shore Reef
Installation

ECT PROJECT No.:	240899
DESIGNED BY:	MB
DRAWN BY:	IHB
CHECKED BY:	MB
APPROVED BY:	TL
STATUS:	
FOR BIDDING	MAY 8, 2025
REVISIONS:	
DESCRIPTION	XX-XX-XXXX

OVERALL LOCATION
PLAN

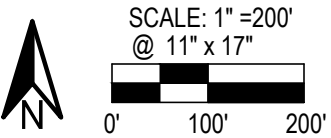




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FOR BIDDING	MAY 8, 2025
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CHANNEL ISLAND
NEAR-SHORE REEF
ENLARGEMENT



- NOTES:
- STONE/FILL VOLUME: 15,369 CY (21,516 TONS, ASSUMING 1.4 TONS/CY)
 - WATER ELEVATIONS, IGLD85:
 - LOW WATER DATUM: 577.5'
 - DATE OF SURVEY: 07/22/2021(AT ESSEXVILLE, MI STATION ID#9075035): 581.02'
 - U.S. ARMY CORPS OF ENGINEERS ORDINARY HIGH WATER: 581.5'
 - HORIZONTAL CONTROL IS BASED ON MICHIGAN STATE PLANE, SOUTH ZONE, NAD83, US FOOT

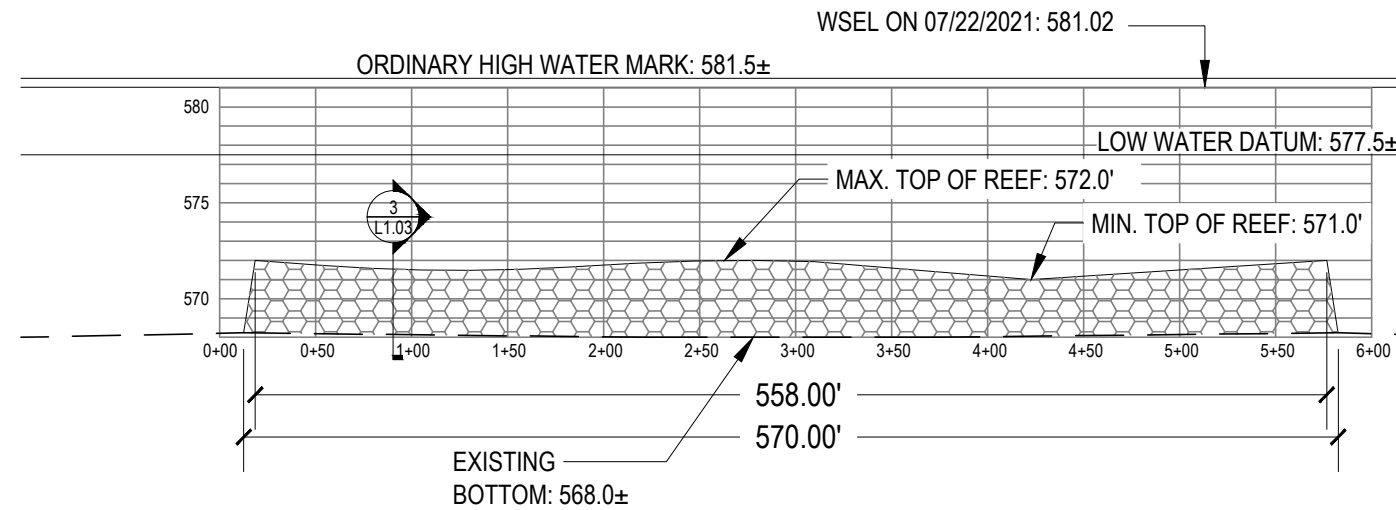
L1.02

STATE OF MICHIGAN,
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STATUS:	
FOR BIDDING	MAY 8, 2025
REVISIONS:	
DESCRIPTION	XX-XX-XXXX

CROSS SECTIONS

L1.03



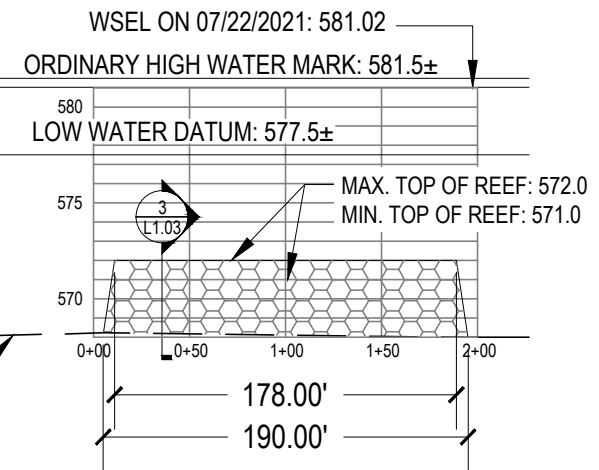
TOLERANCES
± 0.5' VERTICAL
± 5.0' HORIZONTAL

EXISTING
BOTTOM

NOTE:
STONE/FILL VOLUME: 15,369 CY
(21,516 TONS, ASSUMING 1.4 TONS/CY)



HORIZ SCALE: 1" = 100'
VERT SCALE: 1" = 10'



2 LATITUDINAL SECTION

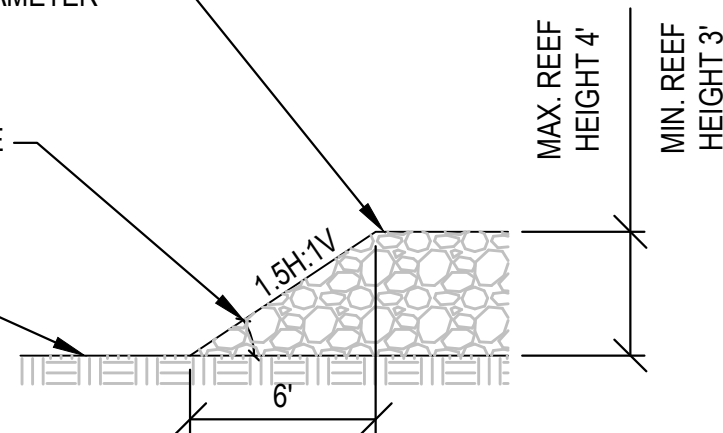


HORIZ SCALE: 1" = 100'
VERT SCALE: 1" = 10'

REEF MATERIAL:
STONE TO BE FRACTURED
LIMESTONE, 4"-8" DIAMETER

ASSUME NATURAL ANGLE
OF REPOSE FOR ALL
EDGES OF REEF (±35°).

BOTTOMLANDS OF
SAGINAW BAY



NOTES:

- WATER ELEVATIONS, IGLD85:
 - LOW WATER DATUM: 577.5'
 - SURVEY MEASURED AT ESSEXVILLE, MI STATION ID#9075035): 07/22/2021
 - U.S. ARMY CORPS OF ENGINEERS ORDINARY HIGH WATER: 581.5'
- HORIZONTAL CONTROL IS BASED ON MICHIGAN STATE PLANE, SOUTH ZONE, NAD83, US FOOT
- SEE SECTION 3.03 TOLERANCES IN THE PROJECT SPECIFICATIONS FOR REEF PLACEMENT TOLERANCES.

3 TYPICAL CROSS SECTION

NOT TO SCALE